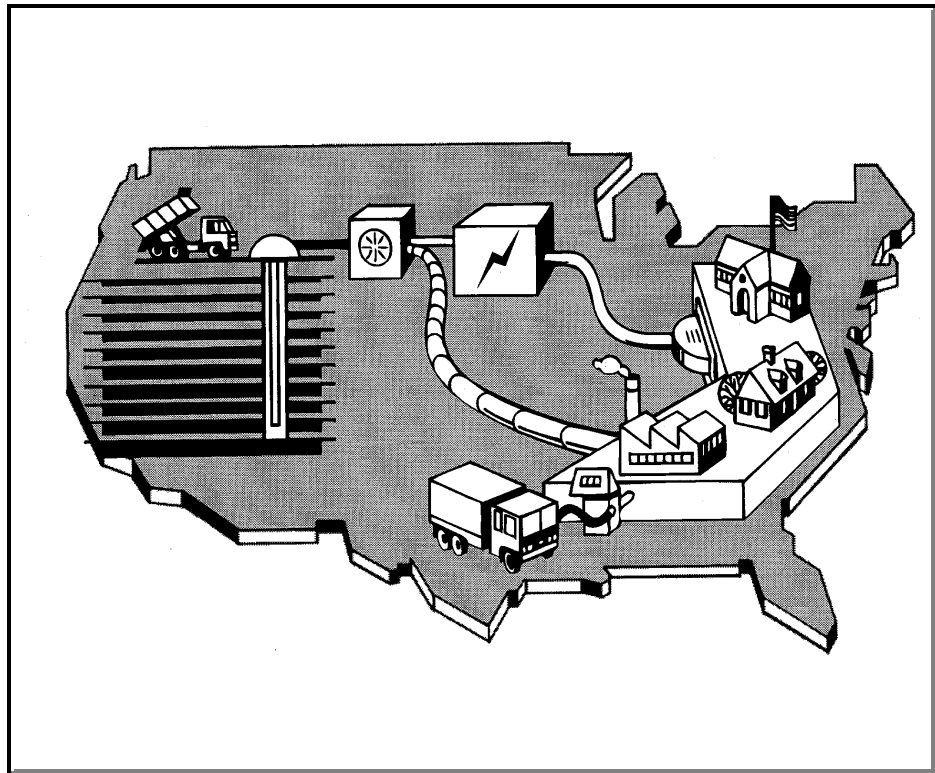




Landfill Gas-to-Energy Project Opportunities

Landfill Profiles for the State of Washington



EPA Landfill Methane Outreach Program



The EPA Landfill Methane Outreach Program, a key component of the United State's *Climate Change Action Plan*, encourages the use of landfill gas (LFG) as an energy resource. EPA assists utilities, municipal and private landfill owners and operators, tribes, and state agencies in reducing methane emissions from landfills through the development of profitable landfill energy recovery projects. Methane captured from landfills can be transformed into a cost-effective fuel source for electricity, heat, boiler and vehicular fuel, or sale to a pipeline. EPA estimates there are approximately 200 landfill methane recovery projects in the U.S. and that up to 750 landfills could install economically viable landfill energy projects.

The Landfill Methane Outreach Program includes five important components: the State Ally, Energy Ally, Industry Ally, Community Partner, and Endorser programs. EPA establishes separate alliances with state agencies, energy providers (including investor-owned, municipal and other public power utilities and cooperatives), key trade and public sector associations, members of the landfill gas development industry (including developers, engineers, equipment vendors, and others) and local communities, municipalities and landfill owner/operators through a Memorandum of Understanding (MOU). By signing the MOU, each Ally/Partner acknowledges a shared commitment to the promotion of landfill gas-to-energy recovery at solid waste landfills, recognizes that the widespread use of landfill gas will reduce emissions of methane and other gases, and commits to undertake activities to enhance development of this resource. In return, EPA agrees to provide landfill gas-to-energy project assistance and public recognition of the Allies' and Partners' participation in the program.

Introduction

Since 1994 the U.S. EPA's Landfill Methane Outreach Program (LMOP) has participated in an ongoing effort to gather information on Municipal Solid Waste landfills (MSW). A key component of the LMOP is to provide MSW landfill owners and operators, project developers, utilities, and other potential project participants with information on MSW landfills that may offer attractive energy development opportunities. This document presents state specific landfill information, hereinafter referred to as the landfill profiles. These profiles are useful to evaluate the potential for developing landfill gas-to-energy projects (LFGTE). EPA assembled this information from state and local sources as well as various national solid waste publications, landfill owners and operators, and project developers.

The EPA has prepared a separate document to describe the methodology used to develop the state-specific landfill profiles and estimate the benefits of using LFGTE as an energy source. The document, *Landfill Gas-to-Energy Project Opportunities, Background Information on Landfill Profiles*, contains background information on gas collection and use, describes the data fields according to the five sections listed on the landfill profiles, and where applicable, illustrates calculations and default values used to derive estimates. EPA strongly recommends that users read the document prior to using the landfill profiles. Users can obtain the document by calling the LMOP hotline at 1-888-STAR-YES.

Data Sources

- EPA-ORD Landfill Gas Utilization-Survey (Thorneloe, 1997)
- Directory and Atlas of Solid Waste Disposal Facilities (SWA, 1994)
- Implementation Guide for Landfill Gas Recovery Projects in the Northeast (SCS, 1994)
- Landfill Gas-to-Energy 1994-1995 Activity Report (SWT, 1994)
- Methane Recovery from Landfill Yearbook (GAA, 1994)
- Project developers, landfill owners, and operators
- State and local records
- Survey of Landfill Gas Generation Potential (EPRI, 1992)
- U.S. Landfill Directory (SWANA, 1992)

Landfill Classification

To facilitate the use of available landfill information, EPA has categorized the landfills into five categories: Current Project,¹ Candidate Project, Shutdown, Other, and Unknown waste-in-place (WIP). These categories are based on the status of the landfill's LFGTE project(s) and WIP. The generation of methane is a function of many factors, the most critical being the amount of waste-in-place and the number of years the waste has been in the landfill. Peak methane generation occurs soon after closure; therefore, the longer the landfill has been closed, the less attractive it becomes for methane recovery. Based on the general timing of peak methane generation, EPA assumes that landfills that ceased accepting waste prior to 1993 have a low probability of generating enough methane to make a gas recovery project economical. Consequently, landfills need to be operating in 1993 to be considered as having a Candidate Project.

Landfill Categorizes

Current Project:

- Landfill with operational LFGTE project or landfill with LFGTE project under construction.

Candidate Project:

- Landfill with a potential or planned LFGTE utilization project; or
- Landfill is currently operating or closed after 1993; and has more than 1,000,000 tons of municipal solid waste-in-place.²

Shutdown:

- Landfill with shutdown LFGTE project.

Other:

- Landfill has less than 1,000,000 tons of municipal solid waste-in-place with no current or planned LFGTE project.

Unknown WIP:

- Landfill with insufficient data to determine the waste-in-place.

State Summary

State-specific landfill profile information is summarized in three exhibits. Exhibit 1 presents a summary of the state-specific potential for LFG utilization energy by landfill category. Exhibit 2 summarizes the emissions avoided by fossil fuel displacement for electricity generation and direct use projects. Exhibit 3 presents an index of the state-specific MSW landfills, referenced by category, landfill name and general characteristics.

¹ Current projects illustrate the wide range of successful project development options.

² By modeling the relationship between WIP and methane generation, a cut-off of 1,000,000 tons of WIP was established; landfills having at least 1,000,000 tons of WIP are considered candidate landfills.



Exhibit 1: Washington MSW Landfill Summary

| Category | No. of Landfills | Est. Capacity Potential | | Est. CH4 Generation (mmscf/d) | Methane Reduction (tons/yr) | | CO2 Equivalent of CH4 Reduction (tons/yr) | |
|-------------|------------------|-------------------------|-------------------------|-------------------------------|-----------------------------|---------|---|-----------|
| | | Electricity (MW) | Gas Capacity (mmBtu/hr) | | Potential | Current | Potential | Current |
| Current | 3 | 16 | 155 | 5 | 28,593 | 24,668 | 600,459 | 518,032 |
| Candidate | 11 | 68 | 685 | 22 | 126,681 | 72,848 | 2,660,303 | 1,529,812 |
| Other | 14 | 13 | 132 | 4 | 24,438 | 0 | 513,190 | 0 |
| Unknown WIP | 26 | | | | | | | |
| Total | 54 | 97 | 971 | 31 | 179,712 | 97,516 | 3,773,952 | 2,047,844 |

Exhibit 2: Potential Washington Emissions Avoided by Fossil Fuel Displacement

| Category | Electricity Generation Project | | | | | | Direct Use Project | | | | | |
|-------------|--------------------------------|---------|-------------|---------------|-------|-------------|--------------------|---------|-------------|---------------|-------|-------------|
| | CO2 (tons/yr) | | | SO2 (tons/yr) | | | CO2 (tons/yr) | | | SO2 (tons/yr) | | |
| | Coal | Oil | Natural Gas | Coal | Oil | Natural Gas | Coal | Oil | Natural Gas | Coal | Oil | Natural Gas |
| Current | 122,338 | 100,409 | 67,517 | 773 | 646 | 0 | 86,105 | 70,671 | 47,520 | 784 | 412 | 0 |
| Candidate | 539,865 | 443,097 | 297,944 | 3,412 | 2,852 | 0 | 381,483 | 313,104 | 210,536 | 3,471 | 1,825 | 2 |
| Other | 104,184 | 85,510 | 57,498 | 659 | 550 | 0 | 73,591 | 60,400 | 40,614 | 670 | 352 | 0 |
| Unknown WIP | | | | | | | | | | | | |
| Total | 766,387 | 629,016 | 422,959 | 4,844 | 4,049 | 0 | 541,179 | 444,175 | 298,669 | 4,924 | 2,589 | 3 |

Exhibit 3: Index of Landfills in Washington

| Category | Landfill Name | WIP | | | Landfill Operating in 1998 | LFG Collected | LFG Utilization Project | Status of LFGTE Project |
|-------------|-----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------|
| | | <2.5 million tons | 2.5 to 4 million tons | >4 million tons | | | | |
| Current | Northside LF | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Construction |
| Current | Olympic View LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Operational |
| Current | Tacoma LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Construction |
| Candidate | Cathcart LF | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Planned |
| Candidate | Cedar Hills LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Planned |
| Candidate | Cheyne Road LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | Cowlitz County LF-B | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | Greater Wenatchee LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | Hawks Prairie LF | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | Hidden Valley LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Planned |
| Candidate | Kent Highlands LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | Roosevelt Regional LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Planned |
| Candidate | Terrace Heights LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Potential |
| Candidate | West LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Planned |
| Other | Aberdeen LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Asotin County LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Bruce LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Cedarville LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Centralia LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Cowlitz County LF(A) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Hansville LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Hobart LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Leichner LF | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Mason County LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Okanogan Central LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Purdy LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Ryegrass LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Other | Vashon LF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Carnation LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Delano LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Enumclaw LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Ephrata LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Fort Lewis LF #5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Gibraltar LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Holden Village LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Inman LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Manson LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | New Waste Inc. LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | North County LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |

Exhibit 3: Index of Landfills in Washington

| Category | Landfill Name | WIP | | | Landfill Operating in 1998 | LFG Collected | LFG Utilization Project | Status of LFGTE Project |
|-------------|----------------------|--------------------------|--------------------------|--------------------------|----------------------------------|--------------------------|-------------------------------|----------------------------|
| | | <2.5 million tons | 2.5 to 4 million tons | >4 million tons | | | | |
| Unknown WIP | Odessa LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Okanogan LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Olalla LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Pasco SLF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Point Roberts LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Port Angeles SLF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Rainbow Valley LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Richland LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | San Juan County LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Snipes Mount LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | South County LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Stevens County LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Sudbury Road LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Whitman County LF | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |
| Unknown WIP | Yakima Firing Center | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Unknown |

| Cathcart LF | | Landfill Category: Candidate | |
|---|--|---------------------------------------|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | Snohomish County | Annual Acceptance Rate (tons): | 314,600 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 0 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Snohomish | Acres Currently Landfilled (acres): | 56 |
| County: | Snohomish | Average Depth (feet): | 110 |
| State: | WA | 1992 Waste-in-Place (tons): | 3,258,989 |
| Year Open: | 1980 | 1998 Waste-in-Place (tons): | 3,258,989 |
| Year Closed: | 1992 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | 1.25 | | |
| LFG Collection System Status: | Operational | | |
| Current LFG Collected (mmscf/d): | 5.2 | | |
| Collection and Treatment System Required Under NSPS/EG: | No | | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Planned | | |
| Utilization System Type: | Reciprocating Engine | | |
| Utilization System Start Year: | | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | PUD No 1 of Snohomish County | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 4 | | 39 |
| Current Capacity: | | | |
| Planned Capacity: | 6.6 | | 108 |
| Utilities in County: | Bonneville Power Admin; PUD No 1 of Snohomish County | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 7,236 | | 20,043 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 151,956 | | 420,901 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 30,782 | 195 | 21,790 198 |
| Fuel Oil: | 25,264 | 163 | 17,884 104 |
| Natural Gas: | 16,988 | 0 | 12,026 0 |
| E. CONTACT INFORMATION | | | |
| | Landfill Owner | Landfill Operator | |
| Contact Name: | Jeff Kelly-Clarke, Executive Director | Jeff Kelly-Clarke, Executive Director | |
| Mailing Address: | 2930 Wetmore Avenue | 2930 Wetmore Avenue | |
| Phone Number: | 425-388-3425 | 425-388-3425 | |
| Fax Number: | | | |

A. GENERAL LANDFILL INFORMATION

| | | | |
|----------------------------|--------------|---------------------------------------|------------|
| Landfill Owner: | King County | Annual Acceptance Rate (tons): | 919,857 |
| Landfill Owner Type: | | Year Annual Acceptance Rate Reported: | 1993 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Maple Valley | Acres Currently Landfilled (acres): | 200 |
| County: | King | Average Depth (feet): | 150 |
| State: | WA | 1994 Waste-in-Place (tons): | 21,839,714 |
| Year Open: | 1964 | 1998 Waste-in-Place (tons): | 25,519,142 |
| Year Closed: | 2022 | | |

B. LANDFILL GAS COLLECTION

| | |
|---|-------------|
| Estimated Methane Generation (mmscf/d): | 6.18 |
| LFG Collection System Status: | Operational |
| Current LFG Collected (mmscf/d): | 10.0 |
| Collection and Treatment System Required Under NSPS/EG: | No |

C. LANDFILL GAS UTILIZATION

| | | | |
|--------------------------------|-------------------------------------|----|-------------------------------|
| Current Utilization: | | | |
| Utilization System Status: | Planned | | |
| Utilization System Type: | Combined Cycle | | |
| Utilization System Start Year: | 1996 | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | Puget Sound Power & Light Co | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 19 | | 193 |
| Current Capacity: | | | |
| Planned Capacity: | 32 | | 208 |

Utilities in County: Bonneville Power Admin; PUD No 1 of Snohomish County; Puget Sound Power & Light Co; Seattle

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

| | <i>Potential</i> | | <i>Current</i> | |
|---|---------------------------------------|----------------------|---------------------------|----------------------|
| <i>Methane Reduction (tons/yr):</i> | 35,714 | | 38,544 | |
| <i>CO2 Equivalent of CH4 Reduction (tons/yr):</i> | 750,002 | | 809,424 | |
| <i>Emissions Avoided by Fossil Fuel Displacement:</i> | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> | |
| | <i>CO2 (tons/yr)</i> | <i>SO2 (tons/yr)</i> | <i>CO2 (tons/yr)</i> | <i>SO2 (tons/yr)</i> |
| <i>Coal:</i> | 152,330 | 963 | 107,549 | 979 |
| <i>Fuel Oil:</i> | 125,026 | 805 | 88,271 | 514 |
| <i>Natural Gas:</i> | 84,069 | 0 | 59,355 | 1 |

E. CONTACT INFORMATION

| Landfill Owner | | Landfill Operator |
|------------------|--|------------------------------------|
| Contact Name: | | Rodney Hansen, Solid Waste Manager |
| Mailing Address: | | 400 Yesler Way |
| | | Room 600 |
| Phone Number: | | 206-296-4385 |
| Fax Number: | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

2



| Cheyne Road LF | | Landfill Category: Candidate | |
|---|---|---|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | Yakima County Solid Waste Division | Annual Acceptance Rate (tons): | 86,143 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1998 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Yakima | Acres Currently Landfilled (acres): | |
| County: | Yakima | Average Depth (feet): | |
| State: | WA | Waste-in-Place (tons): | 1,198,976 |
| Year Open: | 1968 | 1998 Waste-in-Place (tons): | 1,281,664 |
| Year Closed: | | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | | 0.75 | |
| LFG Collection System Status: | | | |
| Current LFG Collected (mmscf/d): | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Potential | | |
| Utilization System Type: | Unknown | | |
| Utilization System Start Year: | | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 2 | | 23 |
| Current Capacity: | | | |
| Planned Capacity: | | | |
| Utilities in County: Benton Rural Electric Assn; Bonneville Power Admin; Pacificorp; PUD No 1 of Benton County; PUD | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 4,312 | | 0 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 90,550 | | 0 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 18,153 | 115 | 12,985 118 |
| Fuel Oil: | 14,899 | 96 | 10,657 62 |
| Natural Gas: | 10,019 | 0 | 7,166 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | Ron Pepper, Solid Waste Engineer | Ron Pepper, Solid Waste Engineer | |
| Mailing Address: | 128 North 2nd Street Room 408 Courthouse | 128 North 2nd Street Room 408 Courthouse | |
| Phone Number: | 509-574-2455 | 509-574-2455 | |
| Fax Number: | | | |

| Cowlitz County LF-B | | | Landfill Category: Candidate | |
|---|---|---------------------------------------|-------------------------------|---------------|
| A. GENERAL LANDFILL INFORMATION | | | | |
| Landfill Owner: | Cowlitz County | Annual Acceptance Rate (tons): | 82,952 | |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1998 | |
| Alternative Landfill Name: | | Design Capacity (tons): | | |
| City: | Kelso | Acres Currently Landfilled (acres): | | |
| County: | Cowlitz | Average Depth (feet): | | |
| State: | WA | Waste-in-Place (tons): | 1,984,762 | |
| Year Open: | 1974 | 1998 Waste-in-Place (tons): | 2,157,350 | |
| Year Closed: | 2008 | | | |
| B. LANDFILL GAS COLLECTION | | | | |
| Estimated Methane Generation (mmscf/d): | | 0.97 | | |
| LFG Collection System Status: | | | | |
| Current LFG Collected (mmscf/d): | | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | | |
| C. LANDFILL GAS UTILIZATION | | | | |
| Current Utilization: | | | | |
| Utilization System Status: | Potential | | | |
| Utilization System Type: | Unknown | | | |
| Utilization System Start Year: | | | | |
| Electric Utility Provider(s): | Cowlitz Coutny Public Utility District #1 | | | |
| Natural Gas Provider(s): | | | | |
| Energy Purchaser(s): | | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) | |
| Estimated Potential Capacity: | 3 | | 30 | |
| Current Capacity: | | | | |
| Planned Capacity: | | | 4 | |
| Utilities in County: Bonneville Power Admin; PUD No 1 of Cowlitz County | | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | | |
| | <i>Potential</i> | | <i>Current</i> | |
| Methane Reduction (tons/yr): | 5,607 | | 0 | |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 117,745 | | 0 | |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> | |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) | SO2 (tons/yr) |
| Coal: | 23,678 | 150 | 16,884 | 154 |
| Fuel Oil: | 19,434 | 125 | 13,858 | 81 |
| Natural Gas: | 13,068 | 0 | 9,318 | 0 |
| E. CONTACT INFORMATION | | | | |
| Landfill Owner | | Landfill Operator | | |
| Contact Name: | Don Olson | Don Olson, Public Works Director | | |
| Mailing Address: | 207 4th Avenue North | 207 4th Avenue North | | |
| Phone Number: | 360-577-3125 | 360-577-3125 | | |
| Fax Number: | | | | |

| Greater Wenatchee LF | | | Landfill Category: Candidate | |
|--|---------------------------------------|---------------------------------------|-------------------------------|---------------|
| A. GENERAL LANDFILL INFORMATION | | | | |
| Landfill Owner: | WMI | Annual Acceptance Rate (tons): | 100,444 | |
| Landfill Owner Type: | Private | Year Annual Acceptance Rate Reported: | 1998 | |
| Alternative Landfill Name: | | Design Capacity (tons): | | |
| City: | | Acres Currently Landfilled (acres): | | |
| County: | Douglas | Average Depth (feet): | | |
| State: | WA | Waste-in-Place (tons): | 2,008,248 | |
| Year Open: | 1975 | 1998 Waste-in-Place (tons): | 2,190,816 | |
| Year Closed: | | | | |
| B. LANDFILL GAS COLLECTION | | | | |
| Estimated Methane Generation (mmscf/d): | | 0.98 | | |
| LFG Collection System Status: | | | | |
| Current LFG Collected (mmscf/d): | | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | | |
| C. LANDFILL GAS UTILIZATION | | | | |
| Current Utilization: | | | | |
| Utilization System Status: | Potential | | | |
| Utilization System Type: | Unknown | | | |
| Utilization System Start Year: | | | | |
| Electric Utility Provider(s): | | | | |
| Natural Gas Provider(s): | | | | |
| Energy Purchaser(s): | | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) | |
| Estimated Potential Capacity: | 3 | | 31 | |
| Current Capacity: | | | | |
| Planned Capacity: | | | | |
| Utilities in County: Bonneville Power Admin; Nespelem Valley Elec Coop Inc; PUD No 1 of Douglas County; Waterville | | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | | |
| | <i>Potential</i> | | <i>Current</i> | |
| Methane Reduction (tons/yr): | 5,656 | | 0 | |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 118,784 | | 0 | |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> | |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) | SO2 (tons/yr) |
| Coal: | 24,468 | 155 | 17,034 | 155 |
| Fuel Oil: | 20,082 | 129 | 13,980 | 82 |
| Natural Gas: | 13,503 | 0 | 9,401 | 0 |
| E. CONTACT INFORMATION | | | | |
| Landfill Owner | | Landfill Operator | | |
| Contact Name: | Eldon Richardson, Operations Manager | Eldon Richardson, Operations Manager | | |
| Mailing Address: | P.O. Box 1440 | P.O. Box 1440 | | |
| Phone Number: | 509-662-4591 | 509-662-4591 | | |
| Fax Number: | | | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

5



A. GENERAL LANDFILL INFORMATION

| | | | |
|----------------------------|-----------------|---------------------------------------|-----------|
| Landfill Owner: | Thurston County | Annual Acceptance Rate (tons): | 129,907 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1998 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Olympia | Acres Currently Landfilled (acres): | 65 |
| County: | Thurston | Average Depth (feet): | 80 |
| State: | WA | Waste-in-Place (tons): | 2,415,609 |
| Year Open: | 1970 | 1998 Waste-in-Place (tons): | 2,594,543 |
| Year Closed: | 2007 | | |

B. LANDFILL GAS COLLECTION

| | |
|---|-------------|
| Estimated Methane Generation (mmscf/d): | 1.08 |
| LFG Collection System Status: | Operational |
| Current LFG Collected (mmscf/d): | |
| Collection and Treatment System Required Under NSPS/EG: | No |

C. LANDFILL GAS UTILIZATION

| | | | |
|--------------------------------|---|----|-------------------------------|
| Current Utilization: | | | |
| Utilization System Status: | Potential | | |
| Utilization System Type: | Unknown | | |
| Utilization System Start Year: | | | |
| Electric Utility Provider(s): | Puget Sound Electric (or Energy) - [PSE] | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | Chese Factory located 1 mile away. Consider | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 3 | | 34 |
| Current Capacity: | | | |
| Planned Capacity: | 1.8 | | 14 |

Utilities in County: Bonneville Power Admin; PUD No 1 of Lewis County; Puget Sound Power & Light Co

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

| | <i>Potential</i> | | <i>Current</i> | |
|---|---------------------------------------|----------------------|---------------------------|----------------------|
| <i>Methane Reduction (tons/yr):</i> | 6,253 | | 0 | |
| <i>CO2 Equivalent of CH4 Reduction (tons/yr):</i> | 131,321 | | 0 | |
| <i>Emissions Avoided by Fossil Fuel Displacement:</i> | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> | |
| | <i>CO2 (tons/yr)</i> | <i>SO2 (tons/yr)</i> | <i>CO2 (tons/yr)</i> | <i>SO2 (tons/yr)</i> |
| <i>Coal:</i> | 26,835 | 170 | 18,831 | 171 |
| <i>Fuel Oil:</i> | 22,025 | 142 | 15,456 | 90 |
| <i>Natural Gas:</i> | 14,810 | 0 | 10,393 | 0 |

E. CONTACT INFORMATION

| Landfill Owner | | Landfill Operator |
|------------------|---|--------------------------------|
| Contact Name: | Bill Townsend | Dave Merrill, Facility Manager |
| Mailing Address: | 921 Lakeridge Drive SW Building 4 Room 100 | 2000 Lakeridge Drive SW |
| Phone Number: | 360-754-4348 | 360-786-5136 |
| Fax Number: | | |

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December 5, 1998

State: WA

Page:

6



| Hidden Valley LF | | | Landfill Category: Candidate |
|---|---------------------------------------|---------------------------------------|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | Land Recovery, Inc. | Annual Acceptance Rate (tons): | 293,708 |
| Landfill Owner Type: | Private | Year Annual Acceptance Rate Reported: | 1998 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Puyallup | Acres Currently Landfilled (acres): | 65 |
| County: | Pierce | Average Depth (feet): | 110 |
| State: | WA | Waste-in-Place (tons): | 17,425,280 |
| Year Open: | 1959 | 1998 Waste-in-Place (tons): | 18,342,400 |
| Year Closed: | 1999 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | | 4.03 | |
| LFG Collection System Status: | | Operational | |
| Current LFG Collected (mmscf/d): | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Planned | | |
| Utilization System Type: | Unknown | | |
| Utilization System Start Year: | | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 13 | | 126 |
| Current Capacity: | | | |
| Planned Capacity: | | | |
| Utilities in County: Alder Mutual Light Co Inc; Bonneville Power Admin; Eatonville Power & Light Dept; Elmhurst Mut | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | Current |
| Methane Reduction (tons/yr): | 23,282 | | 0 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 488,916 | | 0 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | <i>CO2 (tons/yr)</i> | <i>SO2 (tons/yr)</i> | <i>CO2 (tons/yr)</i> |
| <i>Coal:</i> | 99,449 | 629 | 70,110 |
| <i>Fuel Oil:</i> | 81,623 | 525 | 57,543 |
| <i>Natural Gas:</i> | 54,885 | 0 | 38,693 |
| | | | 638 |
| | | | 335 |
| | | | 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | Harvey Doman, Facility Manager | Harvey Doman, Facility Manager | |
| Mailing Address: | P.O. Box 73057 | P.O. Box 73057 | |
| Phone Number: | 253-847-7555 | 253-847-7555 | |
| Fax Number: | | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

7



| Kent Highlands LF | | Landfill Category: Candidate |
|---|---|---|
| A. GENERAL LANDFILL INFORMATION | | |
| Landfill Owner: | City of Seattle | Annual Acceptance Rate (tons): |
| Landfill Owner Type: | | Year Annual Acceptance Rate Reported: |
| Alternative Landfill Name: | | Design Capacity (tons): |
| City: | Kent | Acres Currently Landfilled (acres): 60 |
| County: | King | Average Depth (feet): 110 |
| State: | WA | 1994 Waste-in-Place (tons): 8,000,000 |
| Year Open: | 1968 | 1998 Waste-in-Place (tons): 8,000,000 |
| Year Closed: | 1986 | |
| B. LANDFILL GAS COLLECTION | | |
| Estimated Methane Generation (mmscf/d): | 2.46 | |
| LFG Collection System Status: | Operational | |
| Current LFG Collected (mmscf/d): | 3.7 | |
| Collection and Treatment System Required Under NSPS/EG: | No | |
| C. LANDFILL GAS UTILIZATION | | |
| Current Utilization: | | |
| Utilization System Status: | Potential | |
| Utilization System Type: | Reciprocating Engine | |
| Utilization System Start Year: | | |
| Electric Utility Provider(s): | | |
| Natural Gas Provider(s): | | |
| Energy Purchaser(s): | Seattle City Light | |
| Capacity: | Electricity Generation Project (MW) | OR Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 8 | 77 |
| Current Capacity: | | |
| Planned Capacity: | 3.1 | 25 |
| Utilities in County: | Bonneville Power Admin; PUD No 1 of Snohomish County; Puget Sound Power & Light Co; Seattle | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | |
| | <i>Potential</i> | <i>Current</i> |
| Methane Reduction (tons/yr): | 14,247 | 14,261 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 299,187 | 299,487 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | <i>Direct Use Project</i> |
| | <i>CO2 (tons/yr)</i> <i>SO2 (tons/yr)</i> | <i>CO2 (tons/yr)</i> <i>SO2 (tons/yr)</i> |
| Coal: | 60,774 384 | 42,903 390 |
| Fuel Oil: | 49,881 321 | 35,213 205 |
| Natural Gas: | 33,541 0 | 23,678 0 |
| E. CONTACT INFORMATION | | |
| | Landfill Owner | Landfill Operator |
| Contact Name: | | |
| Mailing Address: | | |
| Phone Number: | | 206-684-7686 |
| Fax Number: | | |

* *Italicized indicates values estimated by EPA.*

| Northside LF | | Landfill Category: | Current |
|---|---|---------------------------------------|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | City of Spokane | Annual Acceptance Rate (tons): | |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Spokane | Acres Currently Landfilled (acres): | 350 |
| County: | Spokane | Average Depth (feet): | 100 |
| State: | WA | 1994 Waste-in-Place (tons): | 4,000,000 |
| Year Open: | 1968 | 1998 Waste-in-Place (tons): | 4,000,000 |
| Year Closed: | 1993 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | 1.44 | | |
| LFG Collection System Status: | Operational | | |
| Current LFG Collected (mmscf/d): | 2.9 | | |
| Collection and Treatment System Required Under NSPS/EG: | No | | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Construction | | |
| Utilization System Type: | Reciprocating Engine | | |
| Utilization System Start Year: | 1998 | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | Washington Water Power | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 5 | | 45 |
| Current Capacity: | | | |
| Planned Capacity: | | | 60 |
| Utilities in County: | Bonneville Power Admin; Cheney Light Dept; Inland Power & Light Company; Kootenai Electric Co | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 8,332 | | 11,178 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 174,968 | | 234,734 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 35,517 | 225 | 25,090 228 |
| Fuel Oil: | 29,151 | 188 | 20,593 120 |
| Natural Gas: | 19,602 | 0 | 13,847 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | | Dennis Hein, Manager | |
| Mailing Address: | | East 1225 Marietta | |
| Phone Number: | | 509-625-7878 | |
| Fax Number: | | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

9



| Olympic View LF | | Landfill Category: | Current |
|---|---------------------------------------|---------------------------------------|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | Kitsap County | Annual Acceptance Rate (tons): | 298,841 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1998 |
| Alternative Landfill Name: | Olympic View SLF | Design Capacity (tons): | |
| City: | Kitsap County | Acres Currently Landfilled (acres): | 65 |
| County: | Kitsap | Average Depth (feet): | 100 |
| State: | WA | Waste-in-Place (tons): | 7,004,248 |
| Year Open: | 1960 | 1998 Waste-in-Place (tons): | 7,382,856 |
| Year Closed: | 2012 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | | 1.91 | |
| LFG Collection System Status: | | Operational | |
| Current LFG Collected (mmscf/d): | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Operational | | |
| Utilization System Type: | Leachate Evaporation | | |
| Utilization System Start Year: | 1998 | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 6 | | 60 |
| Current Capacity: | | | |
| Planned Capacity: | | | |
| Utilities in County: Bonneville Power Admin; PUD No 3 of Mason County; Puget Sound Power & Light Co | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 11,036 | | 0 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 231,754 | | 0 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 47,357 | 299 | 33,233 302 |
| Fuel Oil: | 38,868 | 250 | 27,276 159 |
| Natural Gas: | 26,136 | 0 | 18,341 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | Damon Defrattes | Damon Defrattes | |
| Mailing Address: | 10015 SW Barney White Road | 10015 SW Barney White Road | |
| Phone Number: | 360-674-2331 | 360-876-7053 | |
| Fax Number: | | | |

* *Italicized indicates values estimated by EPA.*

| Roosevelt Regional LF | | | Landfill Category: Candidate | |
|---|---------------------------------------|---------------------------------------|-------------------------------|---------------|
| A. GENERAL LANDFILL INFORMATION | | | | |
| Landfill Owner: | Rabanco | Annual Acceptance Rate (tons): | 1,018,032 | |
| Landfill Owner Type: | Private | Year Annual Acceptance Rate Reported: | 1993 | |
| Alternative Landfill Name: | | Design Capacity (tons): | | |
| City: | Goldendale | Acres Currently Landfilled (acres): | 72 | |
| County: | Klickitat | Average Depth (feet): | 180 | |
| State: | WA | Waste-in-Place (tons): | 7,126,224 | |
| Year Open: | 1990 | 1998 Waste-in-Place (tons): | 9,162,288 | |
| Year Closed: | 2030 | | | |
| B. LANDFILL GAS COLLECTION | | | | |
| Estimated Methane Generation (mmscf/d): | | 2.76 | | |
| LFG Collection System Status: | | Operational | | |
| Current LFG Collected (mmscf/d): | | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | | |
| C. LANDFILL GAS UTILIZATION | | | | |
| Current Utilization: | | | | |
| Utilization System Status: | Planned | | | |
| Utilization System Type: | Reciprocating Engine | | | |
| Utilization System Start Year: | 1999 | | | |
| Electric Utility Provider(s): | | | | |
| Natural Gas Provider(s): | | | | |
| Energy Purchaser(s): | Klickitat PUD | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) | |
| Estimated Potential Capacity: | 9 | | 86 | |
| Current Capacity: | | | | |
| Planned Capacity: | | | | |
| Utilities in County: Bonneville Power Admin; PUD No 1 of Klickitat County | | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | | |
| | <i>Potential</i> | | <i>Current</i> | |
| Methane Reduction (tons/yr): | 15,966 | | 0 | |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 335,280 | | 0 | |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> | |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) | SO2 (tons/yr) |
| Coal: | 67,878 | 429 | 48,079 | 438 |
| Fuel Oil: | 55,711 | 359 | 39,461 | 230 |
| Natural Gas: | 37,461 | 0 | 26,534 | 0 |
| E. CONTACT INFORMATION | | | | |
| Landfill Owner | | | Landfill Operator | |
| Contact Name: | Milo Haugen | Bill Borlang | | |
| Mailing Address: | | 200 112th Avenue NE Suite 300 | | |
| Phone Number: | 509-384-5641 | 509-384-5641 | | |
| Fax Number: | | 509-384-5881 | | |

* *Italicized indicates values estimated by EPA.*

| Tacoma LF | | Landfill Category: | Current |
|---|---|--|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | City of Tacoma, Refuse Utility Division | Annual Acceptance Rate (tons): | 55,378 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1993 |
| Alternative Landfill Name: | City of Tacoma LF | Design Capacity (tons): | |
| City: | Tacoma | Acres Currently Landfilled (acres): | 130 |
| County: | Pierce | Average Depth (feet): | 50 |
| State: | WA | 1994 Waste-in-Place (tons): | 5,610,756 |
| Year Open: | 1960 | 1998 Waste-in-Place (tons): | 5,832,268 |
| Year Closed: | 2014 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | 1.60 | | |
| LFG Collection System Status: | Operational | | |
| Current LFG Collected (mmscf/d): | 3.5 | | |
| Collection and Treatment System Required Under NSPS/EG: | Yes | | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Construction | | |
| Utilization System Type: | Reciprocating Engine | | |
| Utilization System Start Year: | 1998 | | |
| Electric Utility Provider(s): | Tacoma Department of Public Utilities, Ligh | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 5 | | 50 |
| Current Capacity: | | | |
| Planned Capacity: | 1.6 | | 73 |
| Utilities in County: Alder Mutual Light Co Inc; Bonneville Power Admin; Eatonville Power & Light Dept; Elmhurst Mut | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 9,226 | | 13,490 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 193,738 | | 283,298 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 39,464 | 249 | 27,782 253 |
| Fuel Oil: | 32,390 | 209 | 22,802 133 |
| Natural Gas: | 21,780 | 0 | 15,332 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | Gary Kato | Phillip Ringrose, Public Works Manager | |
| Mailing Address: | 3510 South Mullen Street | 3510 South Mullen Street | |
| Phone Number: | 253-593-7713 | 253-591-5543 | |
| Fax Number: | | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

12



| Terrace Heights LF | | Landfill Category: Candidate | |
|---|--|--|-------------------------------|
| A. GENERAL LANDFILL INFORMATION | | | |
| Landfill Owner: | Yakima County | Annual Acceptance Rate (tons): | 160,015 |
| Landfill Owner Type: | Public | Year Annual Acceptance Rate Reported: | 1998 |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | Yakima | Acres Currently Landfilled (acres): | |
| County: | Yakima | Average Depth (feet): | |
| State: | WA | Waste-in-Place (tons): | 3,727,219 |
| Year Open: | 1974 | 1998 Waste-in-Place (tons): | 4,051,325 |
| Year Closed: | 2012 | | |
| B. LANDFILL GAS COLLECTION | | | |
| Estimated Methane Generation (mmscf/d): | | 1.45 | |
| LFG Collection System Status: | | | |
| Current LFG Collected (mmscf/d): | | | |
| Collection and Treatment System Required Under NSPS/EG: | | No | |
| C. LANDFILL GAS UTILIZATION | | | |
| Current Utilization: | | | |
| Utilization System Status: | Potential | | |
| Utilization System Type: | Unknown | | |
| Utilization System Start Year: | | | |
| Electric Utility Provider(s): | | | |
| Natural Gas Provider(s): | | | |
| Energy Purchaser(s): | | | |
| Capacity: | Electricity Generation Project (MW) | OR | Direct Use Project (mmBtu/hr) |
| Estimated Potential Capacity: | 5 | | 45 |
| Current Capacity: | | | |
| Planned Capacity: | | | |
| Utilities in County: Benton Rural Electric Assn; Bonneville Power Admin; Pacificorp; PUD No 1 of Benton County; PUD | | | |
| D. ENVIRONMENTAL BENEFITS OF UTILIZATION | | | |
| | <i>Potential</i> | | <i>Current</i> |
| Methane Reduction (tons/yr): | 8,408 | | 0 |
| CO2 Equivalent of CH4 Reduction (tons/yr): | 176,562 | | 0 |
| Emissions Avoided by Fossil Fuel Displacement: | <i>Electricity Generation Project</i> | | <i>Direct Use Project</i> |
| | CO2 (tons/yr) | SO2 (tons/yr) | CO2 (tons/yr) SO2 (tons/yr) |
| Coal: | 35,517 | 225 | 25,319 230 |
| Fuel Oil: | 29,151 | 188 | 20,780 121 |
| Natural Gas: | 19,602 | 0 | 13,973 0 |
| E. CONTACT INFORMATION | | | |
| Landfill Owner | | Landfill Operator | |
| Contact Name: | Ron Pepper | Ron Pepper, Solid Waste Engineer | |
| Mailing Address: | 128 North 2nd Street 408 Courthouse | 128 North 2nd Street 408 Courthouse | |
| Phone Number: | 509-574-2455 | 509-574-2455 | |
| Fax Number: | | | |

* Italicized indicates values estimated by EPA.

A. GENERAL LANDFILL INFORMATION

| | | | |
|----------------------------|------------------------|---------------------------------------|--|
| Landfill Owner: | | Annual Acceptance Rate (tons): | |
| Landfill Owner Type: | | Year Annual Acceptance Rate Reported: | |
| Alternative Landfill Name: | | Design Capacity (tons): | |
| City: | No reference available | Acres Currently Landfilled (acres): | |
| County: | | Average Depth (feet): | |
| State: | WA | Waste-in-Place (tons): | |
| Year Open: | | 1998 Waste-in-Place (tons): | |
| Year Closed: | | | |

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):

LFG Collection System Status: Planned

Current LFG Collected (mmscf/d):

Collection and Treatment System Required Under NSPS/EG: No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status: Planned

Utilization System Type: Unknown

Utilization System Start Year:

Electric Utility Provider(s):

Natural Gas Provider(s):

Energy Purchaser(s):

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:

Current Capacity:

Planned Capacity:

Utilities in County:

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

| | <i>Potential</i> | <i>Current</i> |
|---|---------------------------------------|------------------------------------|
| <i>Methane Reduction (tons/yr):</i> | | |
| <i>CO2 Equivalent of CH4 Reduction (tons/yr):</i> | | |
| <i>Emissions Avoided by Fossil Fuel Displacement:</i> | <i>Electricity Generation Project</i> | <i>Direct Use Project</i> |
| | <i>CO2 (tons/yr) SO2 (tons/yr)</i> | <i>CO2 (tons/yr) SO2 (tons/yr)</i> |
| <i>Coal:</i> | | |
| <i>Fuel Oil:</i> | | |
| <i>Natural Gas:</i> | | |

E. CONTACT INFORMATION

| | Landfill Owner | Landfill Operator |
|------------------|----------------|-------------------|
| Contact Name: | | |
| Mailing Address: | | |
| Phone Number: | | |
| Fax Number: | | |

* *Italicized indicates values estimated by EPA.*

December 5, 1998

State: WA

Page:

14

